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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,918	01/29/2002	Yuan-Cheng Chin	CHIN3014/EM	3719

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EXAMINER	
NGUYEN, CHANH DUY	
ART UNIT	**PAPER NUMBER**
2675	

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/057,918	CHIN, YUAN-CHENG	
	Examiner	Art Unit	
	Chanh Nguyen	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5-10,12 and 14-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-10,12 and 14-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on December 23, 2004 has been entered and considered by examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3, 5-10, 12, 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al (U.S. Patent Application Publication No. 2003/0034959) in view of Venkate et al (U.S. Patent No. 6,462,330 B1).

As to claim 1, Davis discloses a modular optical mouse (10) for a personal computer, the optical mouse (10) including a body (i.e. integration 16, 36 and 38) having a predetermined space defined inside the body (i.e. space between chip 16 and base plate 38). Davis teaches the chip (16) including memory, arithmetic circuits, image processor 84 electrically contact with each other (see Figures 3 and 4-5) . Thus, it would have been obvious that the chip (16) must have lead or wire so that all the electrical components inside the chip can be connected to each other. This reads on the limitation having at least one lead securely provided inside the space. Davis clearly teaches the lead (i.e. lead connected between electrical components such as memory,

image processor 82) electrically connected to at least one contact tine (pin 90A-90S from chip 16) extending from the body (chip 16 is a portion of the body 16, 36, 38).

Davis teaches at least one control element (e.g., control and I/O processor 72) also received in the predetermined space (i.e. space between chip 16 and base plate 38) defined inside body (i.e. integration 16, 36 and 38). Davis teaches the control elements (e.g., control and I/O processor 72) arranged to be electrically connected to the lead (i.e. wire connected between 72 and the image processor 82; see Figure 5). Davis teaches an optical element (i.e. lens 38C, prism 38D) also received in the predetermined space (i.e. space between chip 16 and base plate 38) defined inside the body (16, 36, 38) having at least on lead (wire connected between electrical components in chip 16).

Davis teaches at least one sensor (photo detector 84) received in the space (i.e. space between chip 16 and base plate 38) to electrically connect with the lead (e.g., . wire connected between 84 and DSP 104; see Figure 5) and to correspond to the reflective light from reflective surface of light emitting diode (34) (see Figure 3) . Davis teaches at least one light emitting diode (34), but silent whether the light emitting diode is received and mounted inside the space defined inside the body having at least one lead to electrically connect with the lead , the light emitting diode being at the bottom of the body. In the same field of endeavor, Venkat teaches at least one light emitting diode (LED; Figure 2) being received and mounted inside the space (space between chip 34 and base 32) defined inside the body (34, 36, 32) having at least one lead to electrically connect with the lead (e.g., wire or lead in chip 34) , the light emitting diode

being at the bottom of the body (LED is at bottom of integration body 34, 36, 32). . Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have used the structure to locate of LED as taught by Venkat so that no registration problems are caused by misalignment of the tracking aperture (see column 5, lines 27-43 of Venkat).

As to claim 10, this claim differs from claim 1 only in that the limitation "an optical element positioned adjacent to the light emitting diode" are additionally recited. Both Davis and Venkat clearly teaches an optical element positioned adjacent to the light emitting diode the light emitting diode (see Figure 3 of Davis and Figure 2 of Venkat).

As to claims 3 and 12, Davis clearly teaches the control element (e.g., I/O processor 72) being control IC.

As to claims 5, Davis teaches the optical elements composed of a light guide element (e.g., prism 38D) adjacent to the light emitting diode (34) and a second light guide element (e.g., lens 38C) adjacent to the sensor (84).

As to claims 6 and 15, Venkat teaches at least one light emitting diode (LED) and the at least one sensor (optical sensor 82 equipped on IC 34) being encapsulated in side body (34, 36, 32).

As to claims 7 and 16, Davis clearly teaches the sensor (82) and control element (72) formed in chip (16) or C.OB type. It also noted that C.O.B type light emitting diode is known in the art.

As to claims 8 and 17, Davis teaches the body (e.g., chip 16) being adapted to be attached to a circuit board 936) to align with a through hole (36a) in the optical mouse.

As to claims 9 and 18, Davis clearly teaches the sensor (84) and the control element (72) being integrally formed (chip 16).

As to claim 14, Davis teaches a second lens (38C) adjacent to the sensor (84) (see Figure 4).

Response to Arguments

4. Applicant's arguments with respect to claims 1, 3, 5-10, 12, 14-18 have been considered but are moot in view of the new ground(s) of rejection.

In view of amendment, the reference of Venkat has been added for new ground of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chanh Nguyen whose telephone number is (571) 272-7772. The examiner can normally be reached on Monday- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chanh Nguyen
Primary Examiner
Art Unit 2675

April 14, 2004